

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/008699

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ C12N15/09, 1/15, 1/19, 1/21, 5/06, C07K14/47, 16/18, C12Q1/68, A61K38/22, 39/395, 31/7088, A61P19/00, 3/10, 3/06, 43/00, G01N33/15, 33/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ C12N15/00-90, 1/00-7/08, C07K14/00-16/46, C12Q1/00-70, A61K38/22, 39/395, 31/7088, A61P19/00, 3/10, 3/06, 43/00, G01N33/15, 33/50

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

JICST FILE (JOIS), EUROPAT (QUESTEL), MEDLINE/BIOSIS/WPIDS (STN), SwissProt/PIR/GeneSeq, Genbank/EMBL/DDBJ/GeneSeq

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	G. THOMAS et al., "Osteocrin, a Novel Bone-specific Secreted Protein That Modulates the Osteoblast Phenotype", The Journal of Biological Chemistry, December 2001, 278(50), p.50563-71	1-11,18-20, 22-24
P,X	WO 2003/054005 A2 (PHENOGENE THERAPEUTIQUES INC.), 03 July, 2003 (03.07.03), & US 2003/0125258 A1	1-11,18-20, 22-24
A	Ichiro SHIMOMURA et al., "Himan-Shibo Saibo o Megutte Kiso Adipocytokine to Seikatsu Shukanbyo", Pharma Medica, 2002, 20(12), pages 69 to 74	1-13,16-26, 29-40,43,44

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
29 July, 2004 (29.07.04)

Date of mailing of the international search report
17 August, 2004 (17.08.04)

Name and mailing address of the ISA/

Authorized officer

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 14, 15, 27, 28, 41 and 42

because they relate to subject matter not required to be searched by this Authority, namely:

Claims 14, 15, 27, 28, 41 and 42 pertain to methods for treatment of a human body by therapy and thus relate to a subject matter which this International Searching Authority is not required to search under the provisions of PCT Article 17(2)(a)(i) and Rule 39.1(iv).

2. ☒ Claims Nos.: (see below)

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

The international search has not been carried out on parts of claims 1, 3, 6, 10, 16, 19, 23, 31, 33 because the claims are not clearly defined or because the inventions of the claims are not fully supported by the description and are not clearly and (Continued to extra sheet.)

3. ☐ Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No.II-2 of continuation of first sheet(2)

fully disclosed in the description.

Claims 1, 6 and 23

The terminology "substantially identical" used in these claims renders the scope of invention unclear, so that the claims cannot be stated as being clearly defined. Specifically, although in the description there is an statement to the effect that "as the substantially identical amino acid sequence, (syncopation) there can be mentioned, for example, an amino acid sequence having a homology (syncopation) of about 70% or higher" (see page 10), the terminologies "about" and "for example" renders the scope of invention unclear.

Further, for example, what concrete structure is had by the protein containing an amino acid sequence that has a homology of 70% with an amino acid sequence of amino acid No. 1 onward of the amino acid sequence of SEQ ID No. 2 or 4, which protein has substantially the same activity as that of the protein containing the amino acid sequence of SEQ ID No. 2 or 4, is unclear. Still further, obtaining this protein overlades persons skilled in the art to which the invention pertains with trial and error process. Therefore, the inventions of the above claims cannot be stated as being fully supported by the description and cannot be stated as being clearly and fully disclosed to such an extent that an expert in the art to which the invention pertains can carry out the invention.

With respect to the invention relating to the "protein containing a substantially identical amino acid sequence" not clearly defined with respect to the claim, not fully supported by the description and not clearly and fully disclosed in the description, no international search has been carried out.

Claims 3, 6, 10, 16, 19, 23, 31 and 33

Which portion is indicated by the terminologies "part" and "a part" used in these claims is unclear, so that the claims cannot be stated as being clearly defined.

Further, for example, what concrete structure is had by partial peptide of an amino acid sequence of amino acid No. 1 onward of the amino acid sequence of SEQ ID No. 2 or 4, which peptide has substantially the same activity as that of the protein containing the amino acid sequence of SEQ ID No. 2 or 4, is unclear. Still further, obtaining this peptide overlades persons skilled in the art to which the invention pertains with trial and error process. Therefore, the inventions of the above claims cannot be stated as being fully supported by the description and cannot be stated as being clearly and fully disclosed to such an extent that an expert in the art to which the invention pertains can carry out the invention.

With respect to the invention relating to the "partial peptide" and "nucleic acid containing a part" not clearly defined with respect to the claim, not fully supported by the description and not clearly and fully disclosed in the description, no international search has been carried out.